

Annotations

Notes about the subject matter of the Comparison chapter and of this book.

[#?] = Appearance of a unique & unknown luminous image in the mind.

Thanx to Annie Lou Knight for the generous use and ownership of a laptop to finish typing and compiling *Of an Image in the Mind*, and for her kindnesses and interest in my writing project.

A01. First noted or written in 2001.

A02. First noted or written in 2002.

A03. First noted or written in 2003.

A04. First noted or written in 2004.

A05. There is a cycle of colours in the alchemical process. This has many variations but in essence we find in this order the stages of:²³⁸

- blackening.
- a manifestation of various colours.
- whitening.
- reddening.

As most alchemical illustrations are in the form of uncoloured woodcuts, engravings, or pen drawings, the alchemist had to use words or symbols to show the colours. They also represented the colour changes in the alchemical process by means of birds or some animal forms. The usual terms were:²³⁸

- 'Nigredo' – blackening - Crow or Raven.
- 'Colores varia' - various colours - Peacock with multi-coloured tail.
- 'Albedo' – whitening – Swan.
- 'Rubedo' – reddening - Pelican feeding its young with its red blood / Phoenix rising from its fiery pyre.

A06. Building on the work of Robert Hooke, Ernst Chladni invented a technique to study the motions of vibrating plates, which served as the basis for the scientific understanding of sound that later emerged in the 19th century.^{152, 153} When resonating by bowing, a plate or membrane divided into regions that vibrate in opposite directions, bounded by lines where no vibration occurs (nodal lines).^{152, 153} Harder and faster bowing on the same spot on the plate produces a much higher tone and creates a more detailed pattern that has more nodes and smaller open spaces.¹⁵³

A07. Dantian, is loosely translated as "elixir field", "sea of qi", or simply "energy center".¹⁶⁵ Dantian are the "qi focus flow centers", important focal points for meditative and exercise techniques such as qigong, martial arts such as t'ai chi

ch'uan, and in traditional Chinese medicine.¹⁶⁵ The Taoist concept of dantian as energy centers is similar to the Indian yoga concept of chakras as key points where prana is stored.¹⁶⁵

A08. My notes about Jungian psychology were concerned with the mandala, the atomic nucleus, the crystal lattice of the Self >> the quaternity in relationship to [#?]. This note here was an attempt to clarify Jungian concepts that are involved with those topics, though I daresay I may need another note to simplify and clarify my clarification.

Jung defines the term individuation as the psychological process that makes of a human being and “individual” a unique, indivisible unit: a whole person.⁸⁷ The symbol of wholeness frequently occurs at the beginning of the individuation process, indeed they can often be observed in the first dreams of early infancy.^{A71}

Self, the organizing principle of the personality.⁹⁰ The Self is the central archetype in the collective unconscious, much as the sun is the center of the solar system. The Self is the archetype of order, organization, and unification; it draws to itself and harmonizes all the archetypes and their manifestations in complexes and consciousness. It connotes the totality of the psyche, embracing both consciousness and unconsciousness and including the individual’s rootedness in the matrix of the collective unconsciousness.⁸⁷ Christ exemplifies the archetype of the Self. The child motif can be expressed by a circle or sphere. Jung called this wholeness that transcends consciousness, the Self.⁸⁷ The Self is the core of the unconscious.³⁰ In this symbol, the opposites of the world and of the human essence are unified in such a way that they are no longer at war but mutually complement each other and give a meaningful shape to life.³⁰

Soul, as a function of a relationship between consciousness and Self.⁸⁷

Mandala, is an “Archetype of wholeness.”⁸⁷ A mandala is a symbol of this archetype.

Symbol, is an archetype buried in the collective unconscious.⁹⁰ A symbol is an attempt to represent an archetype; it is the outward manifestation of the archetype.^{SC22} It is in the process of formation, and is always imperfect.

Archetypes, contents of the collective unconscious.⁹⁰ The word archetype means an original model after which other things are patterned. A synonym is prototype. The archetypes are deeply buried in the collective unconscious. They are unknowable to an individual.⁹⁰ They are universal. Everyone inherits the same archetypal images, i.e. the hero, the child, the trickster, etc. There are as many archetypes as there are typical situations in life. Endless repetition has engraved these experiences into our psychic constitution.⁹⁰

No archetype can be reduced to a simple formula. It is a vessel which can never empty and never fill. It has a potential existence only, and when it takes shape in matter it is no longer what it was.⁸⁷ It persists throughout the ages and requires interpreting ever anew. The archetypes are the imperishable elements of the unconscious, but they change their shape continually.⁸⁷

Individuation, the process by which the consciousness of a person becomes individualized or differentiated from other people.⁹⁰ Individuation plays a major role in psychological development. The goal of individuation is knowing oneself as completely as possible, or self-consciousness.⁹⁰ Individuation and consciousness go hand in hand in the development of the personality.

The most important phases of the individuation process are the integration of the shadow, that is, the “dark” side of the personality, which belongs to the wholeness but is denied or overlooked by consciousness; making conscious the opposite sex components, which Jung called the animus (in a woman) and the anima (in a man); and finally experiencing the Self and developing a relationship with the Self, the innermost core of the psyche.⁹⁰

Both the conscious and unconscious have a psychic and somatic basis. Personality and ego are distinguishable entities. Total personality is the Self. Quaternity is a symbol of wholeness.⁸⁷ The archetype of the spirit is capable of working for good as well as for evil.

Wholeness is therefore empirically speaking of immeasurable extent, older and younger than consciousness, and enfolding it in time and space.⁸⁷

One can only adapt to the outer world if the inner self is in harmony and vice versa.⁹⁰ For healthy development, all facets of the personality must be given an equal opportunity to individuate. If one part is neglected, it will find abnormal ways of expressing itself.⁹⁰ The growth of the personality consists of two interwoven strands, individuation of the various structures that make up the total psyche, and integration of these structures into a unified whole (self-hood).

There are four archetypes that play important roles in everyone's personality.⁹⁰

1. The persona, it is the outward face of the psyche; it is the face the world sees.⁹⁰
2. The animus, the inward face, corresponding to the paternal logos. The animus is the masculine side of the female psyche.⁹⁰ The anima, the inward face, corresponding to the maternal eros. The anima is the feminine side of the male psyche. The anima—animus relationship is always full of animosities.⁸⁷ They have a positive and valuable side in that they can form a bridge to the self and perform a creative function.³⁰ Every person has qualities of the opposite sex, not only in the biological sense that man and woman secrete both male and female sex hormones but also in a psychological sense of attitudes and feelings.⁹⁰ The anima and the animus is projected on the opposite sex, and is responsible for the quality of the relationships between the sexes.
3. The shadow, the archetype that represents one's own gender, and influences the relationship with one's own sex.⁹⁰ It contains more of a person's basic animal nature than any other archetype. In order for a person to become an integral member of the community, it is necessary to tame one's animal spirits contained in the shadow. This taming is accomplished by suppressing manifestations of the shadow and by developing a strong persona which counteracts the power of the shadow.⁹⁰ Imbalances in the personality can arise.
4. The self

For further information on the Self, archetypes, and the collective unconscious see citation 105.¹⁰⁵

A09. It was written of Jung:

He was certainly no ordinary boy, just as he was to become no ordinary man.⁹⁰ Yet many a man of his temperament never develops into anything extraordinary. They often remain immature, become neurotic, or fritter away their lives in eccentricities.⁹⁰

A10. From the question-and-answer web site Quora, one person answering for the question "What is the meaning of chowki?" posts: There is another connotation in religious context. Usually it is "Maataa ki Chowki" a program of singing devotional songs invoking the Mother which is the Supreme Energy pervading the universe.⁴⁸

A11. . . . some more rational and composed than others. They are the calculus used by the architect to anticipate what will happen next.²⁴⁰

The bank of TVs represents the nature of free agency in life, where our choices are not predetermined even though certain junctures or milestones of experience are predetermined and agreed upon by us in the divine dimensional realm, and regardless of what we do ion [sic] physically manifested life we will sooner or later reach that juncture or milestone or find ourselves in particular circumstances regardless of what we intended to do.²⁴⁰

A12. The quilt consists of more than 140 individual quilts or panels.²⁴³ Each panel measures 10½ feet by 10½ feet and contains a 5 x 5 grid of 25 hand-sewn squares, each square representing one of the victims of 9/11.²⁴² The International Quilt Museum is located at the University of Nebraska in Lincoln.²⁴¹

A13. [Anedjib](#), more correctly Adjib, is the Horus name of an early Egyptian king who ruled (2930 BC) during the 1st Dynasty.²⁷⁶ In Egyptian hieroglyphs, a [serekh](#) is a rectangular enclosure representing the niched or gated façade of a palace surmounted by (usually) the Horus falcon, indicating that the text enclosed is a royal name.²⁷⁷ The serekh was the earliest convention used to set apart the royal name in ancient Egyptian iconography, predating the later and better known cartouche by four dynasties and five to seven hundred years.²⁷⁷

A14. The Kaktovik numerals are a base-20 system of numerical digits with a sub-base of 5 created by Alaskan Iñupiat.²⁸¹ The Alaskan Inuit language uses an oral counting system built around the human body; quantities are first described in groups of five.²⁸⁰ For example tallimat—the Iñupiaq word for 5—comes from the word for arm: taliq. In your one arm, you have tallimat fingers. Because of the tally-inspired design, arithmetic using the Kaktovik numerals is strikingly visual. Addition, subtraction and even long division become almost geometric.²⁸⁰

A15. Red and white is a classic color combination in quilt making, popular since the early 19th century as a result of the remarkable colorfastness of Turkey red dye, discovered in the Mediterranean and derived from madder root.^{219, 283}

A16. Because of C.G. Jung's psychological work regarding the psychological and mentally visual atomic lattice of the Self archetype, I became somewhat interested in scientific research on the physical, chemical, material atomic and crystal lattices.

A17. In ancient Egypt many representations in tombs and in the Book of the Dead show the deceased playing the game Senet without a visible opponent.²⁸⁶ It is assumed that in these cases the scenes represent a game played against the powers of the beyond, with success on the part of the deceased being equivalent to good fortune in the afterlife.²⁸⁶ In the written script the *senet* board signified the word *men*: "to endure," and it is possible that this meaning reflects the afterlife concerns of this game.^{286, A19}

A18. It is Y5 on [Gardiner's Sign List](#), a list of common Egyptian hieroglyphs.²⁸⁷ It varies how detailed the hieroglyph is depicted.²⁸⁸ It has been depicted in detail (checkered) and not in detail (not checkered).^{A19}

A19. Many thanks to Dr. Unnamed 1, Dr. Unnamed 2 and Dr. Unnamed 3 at the University for providing information and material on the word *men* and the hieroglyph Y5.

A20. See bibliography citations 79, 80, 81, 83, 84 for some additional Third Eye web pages or sites visited. There are of course many many other sources not herein cited. From a print out of the 1999 web page for Citation 81 selective sentences read, "The eye is omniscient and is mentioned in various scriptures as the third eye, the star of the East, inner eye, dove descending from heaven, eye of Shiva, eye of intuition. It is described by Paramahansa Yogananda in AUTOBIOGRAPHY OF A YOGI. These are the instructions for the Third Eye meditation." Another group of sentences reads, "The Third Eye Meditation by Jon Locke: This is a picture of the single eye mentioned in the Bible: If therefore thine eye be single, thy whole body shall be full of light. Matthew 6:22. During deep meditation, this eye becomes visible in the middle of the forehead." At the time I made a note on the back of the print-out reading: The Philosopher's Stone. Jon Locke. New Age Philosopher. Similar wording from this 1999 web page can be found on this 2023 Light Mission web page titled "[Ajna Center Meditation](#)" To Practice Ajna Center (Third-Eye) Meditation (See Citation # 116)¹¹⁶

For a further account of the Third Eye see the Wikipedia article: [Third eye - Wikipedia](#)

A21. Weavers took great pains to give exact patterns of a tartan by recording the number and color of every thread upon a piece of wood.¹²⁴ These *Maide dalbh* or pattern sticks served as guides for weavers in making their tartans.¹²⁴

The tartans of several hundred years ago were simple checks of two or three colors derived from local trees, plants, berries and roots, before the use of modern industrial dyes.¹²⁴ They were district tartans, and quoting from a 1703 publication, "... are able, at the first view of a Man's Plad, to guess the Place of his Residence ..."¹²⁴ It was only during the 19th century that individual clans would claim a tartan pattern.

A22. First noted or written in 2022.

A23. First noted or written in 2023.

A24. For a history of phosphenes read citation # 117.¹¹⁷

A25. A model of neural processing.⁶⁹

A26. The geometric design that each shaman perceived during his vision became his emblem and was painted on his ritual shirts and other ritual paraphernalia. This appears to explain the so-called “patterned body anthropomorphs”, each with their own unique design. As identified by Native American consultants, these are depictions of individual shamans wearing their ritual shirts which portray the sign of their supernatural power.²³³

I have not read anything to date about whether a checkered design denotes a particular supernatural power as opposed to other designs.

A27. Many thanks to Dr. Unnamed 4 for providing information on the Leibniz Memorial Medal.²⁰⁷

A28. The response from Bard [AI] phrased it: I personally believe that the third eye is a metaphor for our inner potential.²⁹³ Obviously, a programmer inserting the phrase I personally believe before a query result doesn’t indicate any intelligence on the part of the software. In addition none of the information in the results is sourced. Therefore any results by this AI search engine from a search needs to be taken with a grain of salt.²⁹³ The validity of the results should be questioned and addressed with critical thinking. One of many guides to critical thinking when searching the web is [Evaluating Websites](#) in the [Philosophy Research Guide](#) at Princeton University.²⁹⁴ Right >> using critical thinking while evaluating web pages and documents should also apply to the files/chapters of this book. Use critical thinking to evaluate any information I have typed, and any resource that I cited.

A further query to Bard regarding who is writing about children seeing phosphenes returned a response citing works that could not be located.²⁹⁷ The university-affiliated authors of some of those works also could not be located.²⁹⁷

Another query entered in Bard was, “What is the significance of the colors red and white?” The results were interesting, but no sources were given.²⁹⁶ One of the examples of red and white listed were, “In flags: Red and white are the colors of many national flags, including the flags of the United States, China, and Poland.” One other Internet source described China’s flag as red and yellow. An old almanac describes China’s flag as: Red field, with gold star in upper hoist corner; four smaller gold stars form are on right.³²⁰

A29. I took notice because of the number 64, it being the number of the (8 x 8) 64 squares of the I Ching, of the chess board, of the Leibniz Memorial Medal, etc.

A30. It has been reported that studies have shown that melatonin reduces oxidative stress and contributes to oocyte maturation, embryo development, and luteinization of granulosa cells.¹⁵⁶ Clinical studies have demonstrated that melatonin treatment for infertile women increases intra-follicular melatonin concentrations, reduces intra-follicular oxidative damage, and increases the chances of pregnancy.¹⁵⁶

Future studies will indicate whether melatonin treatment could become a new cure for improving oocyte and sperm quality in infertile patients.¹⁵⁶

A31. Gibson and Walk investigated the ability of human infants and other young species to detect depth by testing whether youngsters would crawl over an apparent cliff.^{271, 272, 298, 302} If the youngsters did it could be assumed that the ability to see depth was not inborn. If they did not, this would support the view that perceptual abilities are innate. The visual cliff was an apparatus consisting of a sheet of Plexiglas covering a cloth with a high-contrast checkerboard pattern.²⁷¹ On one side the checkered cloth was placed flush against the Plexiglass.²⁹⁸ On the other side the checkered cloth was placed several feet below the plexiglass giving the appearance of a drop or “cliff.”²⁹⁸

Thirty-six infants, six to fourteen months of age, were placed on the shallow side of the visual cliff apparatus.²⁷¹ Once the infant was placed on the opaque end of the platform, the caregiver (typically a parent) stood on the other side of the transparent plexiglass, calling out for them to come or holding an enticing stimulus such as a toy.²⁷¹ Gibson and Walk found that, even when encouraged to do so by their mothers, 92% of the babies refused to cross the cliff.²⁷² Twenty-seven of the children tested moved off the board; all of these crawled out on the shallow side at least once, but only three crept off onto the glass above the “cliff.”²⁹⁸ Many cried when the mother called to them from the cliff side, but were unwilling to go to her over the apparent chasm; others actually crawled away from her.²⁹⁸ Some patted the glass on the deep side, ascertaining that it was solid, but still backed away.²⁹⁸

No chick, lamb or kid crossed to the deep side.²⁷² When the deep side was suddenly lowered, the animals froze into a defensive position. Even with repeated experience of this procedure, the animals did not learn that it was safe to stand on the glass.²⁷² The rats used their whiskers to feel the glass so would walk across to the deep side unless the bridge was raised so they couldn't reach it with their whiskers. The kittens, like the other species, showed a marked preference for the shallow side. When reared in the dark until 27 days, however, this difference was not apparent and they crawled or fell as often onto the deep as the shallow side, neither did they show the typical freezing response when placed directly onto the deep side. However, after a week in the light their behavior was just like that of light-reared kittens.²⁷²

Although this experiment does not prove that infants' perception and avoidance of the chasm are innate, similar experiments with other animals tended to support the hypothesis that perception is inborn.^{271, 272, 298, 302} Other findings found that at least in some respects, depth perception is learned.²⁷² Thus, biology prepares us to be wary of heights, and experience amplifies that fear.³⁰²

A32. The first surface visual implant, an electrode array, was surgically inserted by a team led by American ophthalmologist William H. Dobelle (1941–2004) in 1978.^{304, A41} With the Dobelle implant, surface electrodes are connected to a camera installed on one side of special eyeglasses. During the treatment, the patient's cortex is systematically and slowly stimulated to re-learn how to see.³⁰⁴ Camera and distance sensors in the sunglasses send the signals to a computer, which sends pulses to an electrode array. Vision is black and white with light appearing as phosphenes, which are visual sensations resulting from mechanical stimulation of the eye (similar to the visual sensations created when pressing upon the eyeball with closed eyes).³⁰⁴ Quality of vision is dependent not only on the technology but also on the patient, as different people see varying numbers of phosphenes.³⁰⁴

Artificial vision refers to the technology (usually, visual implants) that allows blind people to see.³⁰⁴ The main aim of visual implants is to relay pictures to the brain using either cameras or photoreceptor arrays. There are different types of implants used to stimulate vision: retinal, cortical, optic nerve, and biohybrid.^{A41} None of the currently available technologies restores full vision, but they are often able to improve the ability to recognize shapes and movements.³⁰⁴

A33. The five giant mandalas, Sekmai mandala, Heikakmapal mandala, Phurju twin mandalas and Sangolmang mandala are located on the western bank of the Iril River.³⁰⁵ Another two fairly large mandala shaped geoglyphs at Nongren and Keinou are also reported from Manipur valley, India, in 2019.³⁰⁵

Located in the paddy field in the west of Imphal, the capital of Manipur, the [Maklang geoglyph](#) is perhaps the world's largest mandala built entirely of mud.^{305, 306} The site wasn't discovered until 2013 as its whole structure could only be visible via Google Earth satellite imagery.³⁰⁵

A34. A page and a half section on the endocrine system in a 2018 psychology textbook neglects to mention the pineal gland.³⁰² It states, “the most influential endocrine gland is the pituitary gland, a pea-sized structure located in the core of the brain, where it is controlled by an adjacent brain area, the *hypothalamus*.”³⁰²

A35. Bright light tweaks the circadian clock by activating light-sensitive retinal proteins.³⁰² These proteins control the circadian clock by triggering signals to the brain's suprachiasmatic nucleus (SCN)—a pair of grain-of-rice sized, 10,000-

cell clusters in the hypothalamus. The SCN does its job partly by causing the brain's pineal gland to decrease its production of the sleep-inducing hormone *melatonin* in the morning and to increase it in the evening.³⁰²

A36. To test what effects the diffuse light had on hallucinatory activity, the experimenters removed some of the hallucinating subjects to a dark room.²⁹⁸ At first the hallucinations became more vivid, but within two hours they were either gone or greatly diminished. When returned to diffuse light, the subjects again hallucinated.²⁹⁸

A37. The Jain universe is divided into three basic realms, which together form the composite "Cosmic Man," or Lokapurusha.³⁰⁷ The torso and head of the Cosmic Man contain a series of ten or twelve heavenly realms where the inhabitants experience lives of pleasure. The legs represent a series of seven hells, which contain the majority of souls and offer an endless variety of torments.³⁰⁷ But the smallest part of the universe, represented by the disk at the Lokapurusha's waist, is the most important.³⁰⁷ This middle world, which is rotated in this diagram to show its details, is the mere sliver of the cosmos where humans can live and where the great Jain teachers can be born. Here the mixture of pleasure and pain, of good and bad, provides the perfect environment for religious practice and ethical awareness, ultimately making it the only realm where spiritual liberation is possible. When this occurs, the perfected soul floats to the top of the universe and eternally resides in the crescent-shaped realm above the heavens, shown at the forehead of the Lokapurusha.³⁰⁷

A38. In 1981 David H. Hubel and Torsten N. Wiesel won the Nobel Prize in Physiology or Medicine for their discoveries concerning "information processing in the visual system".^{308, 309, 310}

David Hubel and Torsten Wiesel studied the short and long term effects of depriving kittens of vision in one eye.³⁰⁹ Their experiments showed that there is a critical period during which the visual system develops in mammals, and it also showed that any impairment of that system during that time will affect the lifelong vision of a mammal.³⁰⁹

Hubel and Wiesel were able to demonstrate that the message reaching the brain from the eyes undergoes an analysis in which the various components of the retinal image are interpreted with respect to their contrasts, linear patterns and the movement of the image across the retina.³⁰⁸ This analysis occurs in a rigid sequence from one nerve cell to another in which each nerve cell is responsible for a certain detail in the image pattern.³⁰⁸

Hubel and Wiesel found in their studies of the visual cortex that the cells are arranged in a regular manner in columns, and that the cells within each such column have the same functions in interpreting the impulse message from the eyes.³⁰⁸ These columns make up, in turn, so-called hypercolumns, and each such hypercolumn occupies a portion of the cerebral cortex about two-by-two millimeters in area.^{308, 310} Within each such area the information arriving from a correspondingly small region of each eye is analyzed.³⁰⁸

It was demonstrated that individual cells were tuned to respond to features such as the angle of visual objects.³¹⁰ Individual cells that shared the same tuning for features were thought to be interconnected and arranged in a regular manner.³¹⁰ Vertical ocular dominance columns represent input from the left or right eye and orientation columns represent neurons that are selectively tuned to edges of a specific orientation. The exact organisation of cortical columns within the visual cortex remains an interesting topic of current research.³¹⁰

A39. This is analogous to a wedding ring worn in western countries.³¹¹ In southern India, the mark is called pottu (or bottu).³¹¹ The exact shape, size and location of the bindi or pottu shows regional variation; for instance, in northern India the bindi is often worn just below the hairline, while in southern India it is more common to wear it between the eyebrows. In east India, especially in West Bengal, traditionally larger bindis are worn as mark of devotion towards the Goddess Durga.³¹¹

A40. This page stands as the first page in the typical sequence of illuminations preceding the Gospel text. The man shown is very different from Greco-Roman versions of human body; he is armless and his torso is flat, reduced to a

colorful checkered pattern.^{223, 224} The whole body is schematic: frontal, simplified with two eyes staring at the viewer, feet drawn in profile, and framed by a complicated interlace pattern.^{A46}

A41. I'm not clear on the distinctions being employed here. Oster reported on the 1960s work of Brindley and Lewin.^{94, 97, 104} Brindley and Lewin used resonators, which had been coated in silicone plastic and placed under the scalp, and corresponding platinum electrodes, which were in contact with the visual cortex. They used this technique on a woman who had been blinded in both eyes by glaucoma. She reported seeing different phosphenes depending on which resonators were activated.^{94, 97, 104}

A42. I adapted (changed) this particular paragraph and note from Carr.⁹⁴ My additional thoughts were categorizing and defining the descriptions of subjective visualizations may at once both help us to understand these subjective visualizations by yielding novel insights, and yet cloud and hinder our understanding of these subjective visualizations by creating artificial constructs and categorizations that hide or obscure truer or more accurate comprehension of these—oh—things.

A43. Oster writes, “Knoll is better known as the builder, with E.A.F. Ruska in 1932, of the first electron microscope.”⁹⁷

A44. Oster wrote that the patterns of phosphenes must be intimately related to the geometry of the eye—they reflect the neural organization of the visual pathway.⁹⁷ He thought the checkerboard design is probably some manifestation of the orderliness of the neural network of the eye.⁹⁷ In attempting to explain the origin of simple hallucinatory constants Siegal reported that a number of investigators have described them as the product of events within the eye resulting from the visualization of certain structures when light strikes the eye in a particular way.⁹² This thought or sentiment has been expressed by different authors in other papers. I know of no part of human physiology and/or anatomy that reflects a checkerboard or a grid of cells, where the cells are aligned in neatly straight lines as seen in phosphenes, or as seen in a checkerboard drawn with a ruler.

I use the [grid cells](#) of the entorhinal cortex of the brain as an example of the uneven linearity in human physiology.^{316, 318} A grid cell is a type of neuron that fires at regular intervals as an animal navigates an open area, allowing it to understand its position in space by storing and integrating information about location, distance, and direction.^{316, 318} The cells fire in a hexagonal grid lattice. Firing fields are generally equally spaced apart, such that the distance from one firing field to all six adjacent firing fields is approximately the same (though when an environment is resized, the field spacing may shrink or expand differently in different directions. Firing fields are equally positioned, such that the six neighboring fields are located at approximately 60-degree increments.³¹⁶

That approximation (of the distance of one firing field to other firing fields, and of the approximate degree of direction) of the neuronal activity of grid cells can be seen in this [image \(spatial autocorrelogram\)](#).³¹⁷ In the image the firing of these grid cells are shown as unevenly aligned.³¹⁷ Any pictures that I have viewed of the neural network of the eye in particular, or of human physiology in general, have not reflected or looked like the orderliness of a lattice or a grid form in a phosphene, or of a checkerboard drawn with a ruler. See: [Image of the Month: Neurons in the retina](#).³¹⁹ See pg. 147 of citation # 69.⁶⁹

The lattice or gridded form constants of phosphenes more resemble the generated STM (Scanning Tunneling Microscope) representation (it is worth repeating this type of image is a representation) and other images of atoms and the atomic structure of matter than they do the biology or anatomy of the eye or the visual cortex.²⁴ For example >> [Atoms on the surface of a crystal of silicon carbide \(SiC\) arranged in a hexagonal lattice. The space between each atom is 0.3 nanometers.](#)¹⁰⁸

I am in no way a scientist nor an expert in any relevant field of knowledge or research regarding the neural organization of the visual pathway. These are just my layman's observations and thoughts.

A45. There have been many moments since that I wished I had that blind faith again, but it is gone.

A46. While this is an interesting observation, it is also noted that less-clothed pagan Greco-Roman versions of the human body were primarily depicted in southern Europe often with 3-dimensional statues, while the symbol of the fully clothed evangelist Matthew was depicted in a 2-dimensional illustration in the more northerly clime of Ireland. The adoption of Christianity by both southern and northern European peoples is not necessarily the only major or important factor of the differences observed in those body depictions. And are they even comparable? There is more than one way to see this

And is this an actual depiction of contemporary dress, or is this the imaginative rendering of a person embedded with symbolism? I'd be interested to know. After all this image is being called a symbol.

A47. Quite a dream for a 3 ½ year old girl.

A48. On a day when there's a good stretch of blue sky (this also works if the sky is a smooth gray, though not quite as well), cover one eye and, with the other eye, stare at the sky.⁶⁹ What do you see? You will probably say to yourself that you just see sky. But do you see anything moving? If you look very carefully, you will see that there's a lot of motion. If you don't see the motion, keep trying. It's hard to see at first, but once you do see it, seeing it again is a lot easier. Little spots move around in what looks like random patterns at random times.⁶⁹ Look still more carefully and you will see that while the spots move in apparently random paths, they actually follow the same random paths over and over again. Then pay attention to the timing. The motion is synchronized with your pulse!⁶⁹

What you are actually seeing is the movement of blood in your capillaries.⁶⁹ The "random" paths are the paths of the capillaries. The diameter of the capillaries is slightly smaller than the diameter of the corpuscles and white cells in the blood flowing through the capillaries.⁶⁹ So those cells don't flow smoothly, they push through the capillaries in single-file clumps, moving when the pressure of a pulse starts and stopping between pulses.⁶⁹

As a result of some neural mechanisms, you can only see the blood when it's moving, so the visibility of the spot is synchronized with your pulse.⁶⁹ If there were no white, that is, mostly transparent, cells, the corpuscles would solidly fill the capillaries, so your pulse would not produce changes in the shadows, and you wouldn't see motion. But the white cells, being transparent, let through little spots of light, and those spots are what you are actually seeing.⁶⁹

A49. The light from the sun and from most lightbulbs contains photons with a broad range of wavelengths, so when it falls on the retina, all three type of cone cells are activated.⁶⁹ When roughly equal signals are produced by the three kinds of receptors (Red or Long (wavelength) cones, Green or Medium (wavelength) cones, and Blue or Short (wavelength) cones), we have learned to call that experience white in English, blanc in French, blanco in Spanish, and so on.⁶⁹

It is contended there are no colors in the physical world, and that color is purely a subjective quality constructed by the brain.^{323, 331} Or rather they do exist, but only cause our minds create them as an interpretation of the vibrations that are happening around us.²¹⁹ I don't know if that contention applies to the colors of the inner mental world, or what meaning that contention has in relation to the [#?]. I'd be interested to know.

A50. In *Philosophy of the Flesh* George Lakoff makes the point that "we are neural beings."³²⁴ Our brains take their input from the rest of our bodies. What our bodies are like and how they function in the world thus structures the very concepts we can use to think. We cannot think just anything—only what are embodied brains permit."³²⁴

A51. Practitioners traditionally cast yarrow sticks (now coins) and matched them to the hexagrams, which were then interpreted through the book and the practitioner's intuition.³³⁴ Present-day students of the occult often look to the system of symbols in the I Ching for answers to questions about personal strengths and weaknesses as well as possibilities for success and sources of danger.⁹⁸ The ancient Chinese Book of Changes says: "What is empty becomes full."³³⁴ What is full becomes empty. That is, everything changes, all the time."³³⁴

A52. In Hinduism, according to Tantric belief, there are seven chakras (energy centers, wheels of light) running up the spinal column.³³⁴ Each chakra bestows certain abilities and benefits when its energy is activated, and meditating on a chakra will activate its power. When all seven are activated, peak physical and mental states result.³³⁴

Ajna, the sixth chakra is situated between the eyebrows, at the site of “the third eye.”³³⁴ It is the seat of our mental faculties, the abode of individual consciousness—and our meeting point with the divine.

A53. I would suggest a hospital ward feels cold and impersonal because of many other significant reasons, and that a hospital ward being white is an insignificant cause of it feeling cold and impersonal.

A54. Sunlight contains a wide range of wavelengths, and when they pass through a prism, a rainbow-like spectrum is formed.⁶⁹ The ray of each different color of that spectrum bends at certain fixed angles while passing through the prism. The color red bends the least.²¹⁹

A55. He finished his letters by writing, “Spare me a moment to tell me (1) what the meaning of life is for you, (2) what keeps you going, (3) what help—if any—religion gives you, (4) what are the sources of your inspiration and energy, (6) [sic] what is the goal or motive force of your toil, (7) where you find your consolations and your happiness, where in the last resort, your treasure lies.”³⁴⁴

By and large many responses centered upon the activities and beliefs of the respondents.³⁴⁴ Life demands to be lived. Jawaharlal Nehru sincerely answered, “I am afraid I have avoided your principal question—what is the meaning or worth of human life? I cannot answer it except by telling you how I have looked upon life and what motives have driven me to action.”³⁴⁴

There were answers that didn’t fit that norm. Bertrand Russell declared, “That life has no meaning whatever.” George Bernard Shaw wrote back, “Has the question itself any meaning?”³⁴⁴

A56. There is a large pair of eyes on each of the four sides of the main stupa which represent Wisdom and Compassion, known as the Eyes of Buddha.³⁴⁵ Above each pair of eyes is another eye, the third eye. It is said that when Buddha preaches, cosmic rays emanate from the third eye which acts as messages to heavenly beings so that those interested can come down to earth to listen to the Buddha.³⁴⁵ Between the two eyes (also called Wisdom Eyes), a curly symbol, symbolizing the nose, is depicted which looks like a question mark, which is a Nepali sign of number figure one. This sign represents the unity of all things existing in the world as well as the only path to enlightenment through the teachings of Buddha.³⁴⁵

A57. In 1930, Mr. Durant received several letters, from separate persons, declaring their intention of committing suicide.³⁴⁴ In a chapter titled *LETTERS TO A SUICIDE* he brought together the substance of that correspondence, and added some comments on the questions stated in the first chapter of his book.³⁴⁴

At one point in that chapter he wrote:

Let me confess at once that I cannot answer, in any absolute or metaphysical sense, your question as to the meaning of life. I suspect that there is some ultimate significance to everything, though I know that our little minds will never fathom it. For the meaning of anything must lie in its relation to some whole of which it is a part; and how could any fragment or moment of life, like you or me, pretend to rise out of its individual cell and survey or understand the entirety of things?³⁴⁴

A58. Circle and square. The lunar calendar in grid form (quaternity) also contains the aspect of a circle in that every beginning of a month is also an end of the month—a circular quaternity.^{A02} The Moon, circular in shape, is represented by a rectangular grid of numbers. The full moon is also a circular disk of light and in the past has evoked or facilitated the appearance of [#?]. Circle and quaternity.

A59. The ability to scribble ‘geometric patterns’ does not exist in a child under the age of three.⁹³ It seems to develop, however, starting from elementary motoric movements rather rapidly (within months) as a result of the very process of scribbling.⁹³ At the end of this period, each child does not scribble an innumerable number of different patterns but only a limited number of ‘basic ones.’ From this one may conclude that we are dealing here with the activation of pre-formed neuron networks in the visual system.

I don’t really understand how they can come to that conclusion. First of all they state in another part of the short article that scribbling starts at the age of two. The six different adult experimenters came up with different groupings of scribbles. Also, they are only comparing one child’s drawings to the adult phosphene patterns; it hardly seems they can conclude anything from that. Even the third and fourth sentences of the preceding paragraph bother me. Couldn’t there be any number of other conclusions?

A60. There is also variation among brain regions, and there is also variations between the brains of different individuals. There is no single prototypical human; a spectrum of differences in genetic variation and environmental response exists both in healthy individuals and in disease states.³⁴⁷

A61. Maybe there is no Great Beyond. Maybe I am just trying to fill the void created by the loss of a very central tenet of my worldview—the existence of a heaven, or a hell, or other worlds. Maybe it is some other deep psychological need.^{A62} Maybe I was just clinging to a belief or hope of an existence outside of a brief and problematic human existence. I don’t know. I had wanted [#?] to mean something.

A62. Perhaps anxiety plays a role in the search for meaning? I haven’t a full understanding of the role anxiety may have played in shaping my life.

Anxiety’s importance in existentialism makes it a popular topic in psychotherapy.³⁵⁶ Therapists often offer existentialist philosophy as an explanation for anxiety. The assertion is that anxiety is manifested of an individual’s complete freedom to decide, and complete responsibility for the outcome of such decisions.³⁵⁶ Psychotherapists using an existentialist approach believe that a patient can harness his anxiety and use it constructively. Instead of suppressing anxiety, patients are advised to use it as grounds for change. By embracing anxiety as inevitable, a person can use it to achieve his full potential in life.³⁵⁶

A63. Among the most famous ideas associated with existentialism is that of ‘absurdity’. Human existence might be described as ‘absurd.’³⁵⁷ Many existentialists argue that nature as a whole has no design, no reason for existing. Although the natural world can apparently be understood by physical science or metaphysics, this might be better thought of as ‘description’ than either understanding or explanation.³⁵⁷ Thus, the achievements of the natural sciences also empty nature of value and meaning. Unlike a created cosmos, for example, we cannot expect the scientifically described cosmos to answer our questions concerning value or meaning. Moreover, such description comes at the cost of a profound falsification of nature: namely, the positing of ideal entities such as ‘laws of nature’, or the conflation of all reality under a single model of being.³⁵⁷

There is a tendency to exaggerate the significance of scientific discoveries, and to dismiss nonscientific ideas as irrelevant.³⁶⁷ Many scientists, for example, express the viewpoint that the universe seems pointless at a deep level, and that our situation is somehow tragic. Of course, taking the view that the universe seems pointless is also a convenient way for scientists to eliminate any prior prejudices or ulterior motives from their research. They want to figure out how things work without being biased by any thoughts of why they might work that way. It is reasonable to postpone questions of purpose when we have no scientific means of answering them.³⁶⁷ But to deny such influences is not to deal with them.

Many people outside science are interested in exactly the questions that scientists prefer to avoid. They want to know what scientific discoveries mean: in the case of cosmology, why the universe exists and why we are here.³⁶⁷ Turok thought that if science is to overcome the disconnection with society, it needs to be better able to explain science’s

greatest lesson: that for the purpose of advancing our knowledge, it is extremely important to doubt constantly and to live with uncertainty. Richard Feynman [the theoretical physicist] put it this way: "This attitude of mind--this attitude of uncertainty--is vital to the scientist, and it is this attitude of mind which the student must first acquire. It becomes a habit of thought. Once acquired, we cannot retreat from it anymore."³⁶⁷

There is no meaning or value for me personally in the proposition that there is no design or purpose to nature, and there is no reason for existing. Perhaps I am looking for certainty, and I am uncomfortable living with uncertainty.

A64. In the matter of phosphenes, why would it be difficult to imagine a bioelectric human body in general, and a human eye specifically, that produce light internally? Is the light of the mind's eye derived from my external environment, or is it generated within my human body? I don't really know. I mean if you are in the dark, and you evoke a pressure phosphene, where does that light originate from? The eye? A brain part? Where does a [biophoton](#) come from?³⁵² Can the whole or part of the [human bioelectric field](#) generate light?³⁶⁰

I don't know.

For over 100 years scientists have realized neurons in mammalian brains were capable of producing biophotons.³⁷² Virtually all living things emit some degree of light, albeit so weakly that it is very hard to detect.³⁷³ Our own biological glimmer is one thousand times less intense than the sensitivity of the human eye.³⁷³ The human body, especially the face, emits visible light in small quantities that rise and fall with the day.³⁷⁴ This is visible light, not body heat, running from near-infrared to violet in the visible spectrum, or between 200 and 1,300 nanometers, and its emission is linked to the body's internal clock.^{372, 374} Maybe [#?] are biophotons at the red part of the visible spectrum.

A65. I can relate to some symptoms although I am very much not gifted. Nor is existential depression a formally recognized diagnosis in the *Diagnostic and Statistical Manual of Mental Disorders, 5th edition*.³⁶²

A66. "I, Milton Bradley, . . . have invented a new Social Game," Bradley declared on his patent application.³⁶⁶ The young Milton Bradley believed that "the journey of life is governed by a combination of chance and judgment." His game works the same way: there's what you spin, and there's where you choose to go. The Checkered Game of Life is a game of destiny checked by strategy.

Play starts at the board's lower-left corner, on an ivory square labelled Infancy--illustrated by a tiny, black-inked lithograph of a wicker cradle--and ends, usually but not always, at Happy Old Age, at the upper right, though landing on Suicide, with a noose around your neck, is more common than you might think, and means, inconveniently, that you're dead.³⁶⁶ On the one hand: Honesty, Bravery, Success. On the other: Poverty, Idleness, Disgrace. The wise player will strive "to gain on his journey that which shall make him the most prosperous, and to shun that which will retard him in his progress." But even when you're heading for Happiness you can end up at Ruin: passed out, drunk and drooling, on the floor of a seedy-looking tavern where Death darkens the door disguised as a debt collector straight out of "Bleak House"--the bulky black overcoat, the strangely sinister stovepipe hat.³⁶⁶

The Checkered Game of Life made Milton Bradley a brand name.³⁶⁶

Milton Bradley's nineteenth-century game of Life, about vice, virtue, and the pursuit of happiness was reinvented in 1960 as a lesson in Cold War consumerist conformity, a kind of two-dimensional Levittown, complete with paychecks and retirement homes and dental bills.³⁶⁶ Inside the game box are piles and piles of paper (Life is . . . paperwork!): fake automobile insurance, phony stock certificates, pretend promissory notes, and play money, seven and a half million dollars of it, including a heap of mint-green fifty-thousand-dollar bills, each featuring a portrait of Milton Bradley near the end of his days--bearded, aged, antique.³⁶⁶ The 1960 version of Life did away with the checkered game board, and used instead a serpentine race game board, a path representing the voyage of life, from high-school graduation to retirement.

Beginning in 1992, Hasbro, the company that had acquired Milton Bradley eight years earlier, revised Life, slightly, to market it to the baby-boomer parents who had grown up with it: the station wagons became minivans, and, a few miles down life's highway, you could have a midlife crisis.³⁶⁶ Over the years, Hasbro has sold custom editions as movie and television tie-ins; if you have time on your hands, and a boundless tolerance for the cloying edginess of Nickelodeon, you can play the Game of Life in Bikini Bottom SpongeBob SquarePants Edition. Or not.

A67. When we look at something close-up, such as a computer screen or a cellphone, the lens of the eye naturally contracts.³⁶⁹ If you're looking at a screen for prolonged periods, the lens doesn't have the chance to relax, which can lead to eye fatigue. This eye fatigue is also due to a decrease in blinking. Without blinking during prolonged viewing, the eye's surface is more exposed to air and evaporation, which can result in blurred vision.³⁶⁹

The focusing of the eye is controlled by the ciliary muscle, which can change the thickness and curvature of the lens.³⁷⁰ This process of focusing is called *accommodation*. When the ciliary muscle is relaxed, the crystalline lens is fairly flat, and the focusing power of the eye is at its minimum. Under these conditions, a parallel beam of light is focused at the retina. Because light from distant objects is nearly parallel, the relaxed eye is focused to view distant objects. In this connection, "distant" is about 6m and beyond.³⁷⁰

The viewing of closer objects requires greater focusing power.³⁷⁰ The light from nearby objects is divergent as it enters the eye; therefore, it must be focused more strongly to form an image at the retina. There is, however, a limit to the focusing power of the crystalline lens. With the maximum contraction of the ciliary muscle, a normal eye of a young adult can focus on objects about 15cm from the eye. Closer objects appear blurred.³⁷⁰ The minimum distance of sharp focus is called the *near point of the eye*.

No matter how accurately a lens or system of lenses is constructed, an image is never a perfect replica of an object, but is always a little bit blurred due to the wave-like properties of light.⁶⁹ To examine fine detail, your eyes rotate so that the retinal image of the detail falls on a small region at the center of the retina, the fovea, that contains only cones.⁶⁹

The focusing range of the crystalline lens decreases with age. The near point for a 10-year-old child is about 7cm, but by the age of 40 the near point shifts to about 22cm.³⁷⁰ After that the deterioration is rapid. At age 60, the near point is shifted to about 100cm. This decrease in the accommodation of the eye with age is called *presbyopia*.

A68. It is now located at: <http://nwbotanicals.org/oak/newphysics/thirdeye.htm> .

A69. I may be contracting muscles on both sides of the bridge of my nose. I haven't been able to come up with a good description of what I'm doing. It's like I am centering my gaze or crossing my eyes somewhat, or focusing on space close or near me. If I strain to focus I can get a clearer image of [#?] like I may have seen in earlier years.^{A67}

A70. I am not speaking for or against any person's beliefs, faiths, or values. I am just relating my own thoughts and feelings on such matters. I am just relating my own personal journey.

A71. How could they tell what an infant is dreaming about? Could the infant talk?

A72. This Yantra is recommended for every person who has his office or a shop or a showroom to keep this yantra in his home or work place for removal of obstacles, attraction of customers and increasing business.³⁷

A73. It is possible that the remembrance of laying in my bed and seeing [#?] is not an accurate memory. Perhaps I wrote it down in 1994 just imagining such an event had happened.^{321, 326, 332} I don't know.

A74. In this instance I take repeating to mean recurring over time.

A75. In this instance I take repeating to mean a single pattern that repeats itself across a single field of vision (i.e. an emblem or pattern that repeats itself across the length and width of a blanket, curtain, or article of clothing).

A76. While some people have called the Third Eye the Mind's Eye as previously mentioned, here the Mind's Eye is being defined as something existent that may or may not necessarily be relational to the concept of the Third Eye.

A77. Does the light in your mind have wave and/or particle properties, and/or/not some other property of light heretofore not observed? I don't know.

A94. First noted or written in 1994.

A95. First noted or written in 1995.

A96. First noted or written in 1996.

A97. First noted or written in 1997.

A98. First noted or written in 1998.

A99. First noted or written in 1999.

This book is in memory of the family who came before me, and to my family, friends and acquaintances that have passed away. This book is dedicated to the family, friends, and acquaintances of the present. This book is dedicated to the family, friends, and acquaintances of the future. As I progressed through life I became more solitary and withdrawn, and a distance and space grew between me and others. Here then is that affection, withdrawn attention, and muted emotion manifested into this book.^{A23} I would not have been able to type this without every one's presence, or lack thereof, in my life, or things being just the way they have been.
